## PYRROLIDINE
**CAS NO 123-75-1**

### MATERIAL SAFETY DATA SHEET
**SDS/MSDS**

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifiers
- **Product name**: Pyrrolidine
- **CAS-No.**: 123-75-1

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against
- **Identified uses**: Laboratory chemicals, Industrial & for professional use only.

#### 1.3 Details of the supplier of the safety data sheet
- **Company**: Central Drug House (P) Ltd
  7/28 Varadaan House
  New Delhi -110002
  INDIA
- **Telephone**: +91 11 49404040
- **Email**: care@cdhfinechemical.com

#### 1.4 Emergency telephone number
- **Emergency Phone #**: +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture
**Classification according to Regulation (EC) No 1272/2008**
- Flammable liquids (Category 2), H225
- Acute toxicity, Oral (Category 4), H302
- Acute toxicity, Inhalation (Category 4), H332
- Skin corrosion (Category 1A), H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 Label elements
**Labelling according Regulation (EC) No 1272/2008**
- **Pictogram**

  ![Pictogram](image)

  **Signal word**: Danger

- **Hazard statement(s)**
  - H225: Highly flammable liquid and vapour.
  - H302 + H332: Harmful if swallowed or if inhaled
  - H314: Causes severe skin burns and eye damage.
Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
Supplemental Hazard none

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. Lachrymator.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms : Tetrahydropyrrole
Tetramethylenimine

| Formula   | C₄H₉N |
| Molecular weight | 71.12 g/mol |
| CAS-No.  | 123-75-1 |
| EC-No.   | 204-648-7 |

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyrrolidine</td>
<td>Flam. Liq. 2; Acute Tox. 4;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>123-75-1</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>204-648-7</td>
<td>Skin Corr. 1A; H225, H302, H332, H314</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available
SECTION 5: Firefighting measures

5.1 Extinguishing media
   Suitable extinguishing media
   For small (incipient) fires, use media such as "alcohol" foam, dry chemica of water applied ineffective. Cool all affected containers with flooding

5.2 Special hazards arising from the substance or mixture
   Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters
   Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
   Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
   Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
   For personal protection see section 8.

6.2 Environmental precautions
   Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
   Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
   For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
   Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
   Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
   For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
   Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
   Sensitive to carbon dioxide Handle and store under inert gas.
   Storage class (TRGS 510): Flammable Liquids

7.3 Specific end use(s)
   Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls
   Appropriate engineering controls
   Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment

**Eye/face protection**
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body Protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| a) Appearance | Form: liquid  
|              | Colour: colourless |
| b) Odour      | No data available |
| c) Odour Threshold | No data available |
| d) pH         | 12.9 at 100 g/l at 20 °C |
| e) Melting point/freezing point | Melting point/range: < -60 °C |
| f) Initial boiling point and boiling range | 87 - 88 °C at 1013 hPa - lit. |
| g) Flash point | 3 °C - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 10.6 % (V)  
| | Lower explosion limit: 1.6 % (V) |
| k) Vapour pressure | 48.8 mmHg at 20 °C |
| l) Vapour density | 2.46 - (Air = 1.0) |
| m) Relative density | 0.852 g/mL at 25 °C |
| n) Water solubility | completely miscible |
| o) Partition coefficient: n-octanol/water | log Pow: 0.22 |
| p) Auto-ignition temperature | No data available |
9.2 Other safety information
   Relative vapour density  2.46 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity
   No data available

10.2 Chemical stability
   Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
   No data available

10.4 Conditions to avoid
   Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
   Acid chlorides, Acid anhydrides, Strong oxidizing agents, Carbon dioxide (CO2), Acids

10.6 Hazardous decomposition products
   Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)
   Other decomposition products - No data available
   In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

   Acute toxicity
   LD50 Oral - Rat - 433 mg/kg(Pyrrolidine)
   LC50 Inhalation - Rat - 4 h - 11.7 mg/l(Pyrrolidine)

   Skin corrosion/irritation
   No data available(Pyrrolidine)

   Serious eye damage/eye irritation
   No data available(Pyrrolidine)

   Respiratory or skin sensitisation
   No data available(Pyrrolidine)

   Germ cell mutagenicity
   No data available(Pyrrolidine)

   Carcinogenicity
   IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

   Reproductive toxicity
   No data available(Pyrrolidine)

   Specific target organ toxicity - single exposure
   No data available(Pyrrolidine)

   Specific target organ toxicity - repeated exposure
   No data available

   Aspiration hazard
   No data available(Pyrrolidine)
Additional Information
RTECS: UX9650000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea(Pyrrolidine)

SECTION 12: Ecological information
12.1 Toxicity
   Toxicity to fish          LC50 - Danio rerio (zebra fish) - 100 - 220 mg/l - 96 h(Pyrrolidine)

12.2 Persistence and degradability
   No data available(Pyrrolidine)

12.3 Bioaccumulative potential
   Does not bioaccumulate.

12.4 Mobility in soil
   No data available(Pyrrolidine)

12.5 Results of PBT and vPvB assessment
   This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
   Harmful to aquatic life.
   No data available

SECTION 13: Disposal considerations
13.1 Waste treatment methods
   Product
   Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

   Contaminated packaging
   Dispose of as unused product.

SECTION 14: Transport information
14.1 UN number
   ADR/RID: 1922          IMDG: 1922          IATA: 1922

14.2 UN proper shipping name
   ADR/RID: PYRROLIDINE   IMDG: PYRROLIDINE   IATA: Pyrrolidine

14.3 Transport hazard class(es)
   ADR/RID: 3 (8)          IMDG: 3 (8)            IATA: 3 (8)

14.4 Packaging group
   ADR/RID: II             IMDG: II              IATA: II

14.5 Environmental hazards
   ADR/RID: no             IMDG Marine pollutant: no     IATA: no

14.6 Special precautions for user
   No data available
SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H302 + H332 Harmful if swallowed or if inhaled
H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.